

WHAT IS CLAIMED IS:

1. A belt-drive system driven by an internal combustion engine mounted on an automotive vehicle, the belt-drive system comprising:

a driving pulley connected to a crankshaft of the internal combustion engine;

a plurality of driven pulleys connected to respective on-board devices;

a belt wound around the driving pulley and the plurality of the driven pulleys so that all the driven pulleys are driven by the driving pulley, wherein:

the plurality of the driven pulleys include a pulley of an automatic belt-tensioner that controls a belt tension and pulleys of a first generator and a second generator;

the first generator is controlled to generate a generation torque that reduces fluctuations in the belt tension by controlling excitation current supplied to a field coil of the first generator; and

the second generator is controlled to generate an amount of required electric power by controlling excitation current supplied to a field coil of the second generator.

2. The belt-drive system as in claim 1, wherein:

the generation torque of the first generator is controlled to reduce the fluctuations in the belt tension when an average rotational speed of a rotor of the first

generator is lower than a predetermined rotational speed;  
and

the first generator is controlled in a manner to maintain a predetermined terminal voltage when the average rotational speed is equal to or higher than the predetermined speed.

3. The belt-drive system as in claim 2, wherein:

the predetermined rotational speed is a rotational speed of the rotor of the first generator when the internal combustion engine is rotating at an idling speed.

4. The belt-drive system as in claim 2, wherein:

the pulley of the first generator is coupled to the belt at a position closer to the pulley of the belt-tensioner than the pulley of the second generator is coupled.

5. The belt-drive system as in claim 2, wherein:

the generation torque of the first generator is controlled: by supplying the excitation current to the field coil from a voltage source having a voltage higher than a normal output voltage of the first generator when an instantaneous rotational speed of the rotor is higher than the average rotational speed thereof; and by stopping supply of the excitation current to the field coil and attenuating the excitation current by circulating it

through a closed circuit including the field coil when the instantaneous rotational speed of the rotor is lower than the average rotational speed thereof.

6. The belt-drive system as in claim 5, wherein:

electric loads connected to the first generator are limited to heat-generating loads when the average rotational speed of the rotor of the first generator is lower than the predetermined rotational speed.

7. The belt-drive system as in claim 1 further including means for detecting an amount of swing in the belt-tensioner, wherein:

the generation torque of the first generator is controlled when the amount of swing of the belt-tensioner exceeds a predetermined amount.

8. The belt-drive system as in claim 2, wherein:

the first generator is connected to a first system, and the second generator is connected to a second system; and

the first system has a higher terminal voltage than the second system.